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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/777,942	02/06/2001	Jack Wilbur Baldwin	13DV13491	3254

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EXAMINER	
AFTERGUT, JEFF H	
ART UNIT	PAPER NUMBER
1733	11

DATE MAILED: 02/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/777,942	Applicant(s) BALDWIN, JACK WILBUR	
	Examiner Jeff H. Aftergut	Art Unit 1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 January 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4-9,11-14,18 and 19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4-9,11-14,18 and 19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Claim Rejections - 35 USC § 102/103

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claim 14 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Lopez et al.

Lopez et al suggested that it was known to provide a discontinuous tackifier film within a plurality of plies used to manufacture a perform for resin transfer molding. The reference suggested that various techniques would have been useful for the application of the discontinuous deposition of the tackifying resin within the fiber layers which included the use of spraying as well as flexographic printing of the aqueous tackifier. The tackifier was in the form of particles which were disposed in an aqueous coating liquid. After drying of the aqueous coating, a discontinuous pattern of tackifier was provided within the fiber layers and between the fibers of the assembly. The fiber layers were assembled to form a perform for resin transfer molding. It is readily apparent from a reading of Lopez that the powder tackifier was applied in a discontinuous pattern to the fiber layers (the powder stays in a discontinuous pattern after removal of the water from the aqueous liquid applied to the fibers). The reference did not

expressly state that the liquid was applied in a pattern onto the fibers, however such is a processing limitation and the claims at hand are article claims. The applicant is advised that it is not possible for the Office to obtain prior art products and products of the claimed invention and make physical comparisons between the two. Because the product appears to be identical to that produced by applicant, applicant has the burden to show that the claimed processing steps would have produced a materially different product from that described by Lopez. It would have been obvious to one of ordinary skill in the art at the time the invention was made to form a perform for resin transfer molding which included a tackifier therein which was disposed throughout the fiber reinforcement in a discontinuous pattern where such application of the tackifier into the fiber layers included the application of the same via flexographic printing and gravure printing of the aqueous tackifier (which were known pattern applying techniques in the art). The applicant is specifically referred to column 1, lines 31-37 and lines 43-48 for a description of the prior art application of the tackifier and column 2, lines 11-14 and 7, lines 56-59 for a discussion of the discontinuous application of the tackifier to the fiber reinforced materials. Applicant is also referred to column 5, lines 23-29 for the various techniques used to apply the aqueous solution of the fibers. At column 2, lines 52-61, the reference suggested that the tackifier was cured in the performing operation (at least partially cured).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1, 2, 5-8, 11-14, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lopez in view of either one of Vennike or Schommer et al and optionally further taken with either one of PCT 98/50211 or Colegrove et al.

Lopez is discussed above in paragraph 3 and the applicant is referred to the same for a complete discussion of the reference. The reference failed to expressly state that the tackifier was applied to the fabric and/or fiber tows in a pattern when the aqueous tackifier was applied. The reference did expressly state that the aqueous tackifier was capable of application via gravure or flexographic application.

The references to either one of Vennike or Schommer suggested that it was known at the time the invention was made to apply adhesive onto substrates via flexographic or gravure techniques wherein the liquid adhesive was applied in a pattern, see column 1, lines 19-29 and column 2, lines 43-58 of Vennike and column 1, lines 7-10, column 1, lines 20-37, and column 4, lines 61-column 5, line 2 of Schommer et al. clearly, those skilled in the art of coating via gravure or flexographic coating would have readily appreciated that such a coating technique would have applied the coating in a pattern upon the material being coated. One reading the reference to Lopez, employing flexographic or gravure printing would have therefore applied a liquid aqueous tackifier in a pattern upon the fibrous material. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the techniques of coating as suggested by either one of Vennike or Schommer et al in the process of making a perform as taught by Lopez.

With respect to claim 2, both references to Vennike and Schommer suggested that a patterned roll would have been used in the coating operation when coating via flexographic

coating or gravure coating. Regarding claim 5, the reference to Lopez suggested the coating of a tow with the tackifier wherein the tow was clearly a plurality of unidirectionally arranged filaments. Regarding claim 6, note that the reference to Lopez suggested the incorporation of a thermosetting resin as the tackifier. Regarding claim 7, the reference to Lopez suggested the specified weight of tackifier applied, see column 5, lines 6-22. regarding claim 8, while the reference did not expressly suggest the specified volume take up of the resin of the tackifier in the perform, one skilled in the art would have readily appreciated that that the volume take up of the tackifier would have been less than 50% as the desired amount of tackifier was relatively low as one desired to incorporated a majority of resin in the injection molding operation. The ordinary artisan would have expected that the volume of the tackifier in the perform of Lopez would have fallen within the specified range of the claims. Additionally, one skilled in the art would have been expected to optimize the amount of tackifier applied in order to attain the desired effects. Regarding claim 11 and 12, the reference to Lopez suggested the take up of the material on a roll after the coating operation wherein the tow would have subsequently been used in a braiding or winding operation (from a spool). Regarding claim 13, the reference suggested that one skilled in the art would have cut the coated fiber material and stacked the same. those skilled in the art would have readily appreciated that cutting and stacking composite material for shipment for later processing (such as resin transfer molding) was conventional in the art of composite article manufacture and would have been within the purview of the ordinary artisan. Regarding claim 18, the reference to Lopez suggested that one skilled in the art would have shaped the performs in a resin transfer molding operation. Regarding claim 19, the applicant is

advised that the application of the resin in the form of a aqueous tackifier one would have forced the resin into the fiber layers as suggested by Lopez.

The applicant is advised that while the flexographic and gravure coating according to the techniques of Vennike and Schommer et al clearly suggested that such coatings would have been patterned and would have provided a discontinuous coating of the liquid material, to further evidence the same, the references to PCT '211 and Colegrove et al are cited. Both PCT '211 and Colegrove suggested that in the manufacture of a perform for resin transfer molding one skilled in the art at the time the invention was made would have desired to apply the coating of the tackifier in a discontinuous pattern. The reference to Colegrove et al suggested the pattern would have been in the form of a grid. The reference to PCT '211 suggested that discrete spots of the tackifier would have been applied via a printing operation (see page 5, line 33-page 6, line 10). The reference to Colegrove expressly suggested that the tackifier would have been in the form of a grid. It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the coating techniques of gravure or flexographic coating as suggested was known by either one of Vennike or Schommer et al wherein such was suggested as useful in the process of making a perform as suggested by Lopez wherein the discontinuous coating of the tackifier was known to have been desirable as suggested by either one of Colegrove et al or PCT '211.

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over the references as set forth above in paragraph 5 further taken with the admitted prior art.

The reference to Lopez suggested that one skilled in the art would have additionally known to apply the tackifier via a spray coating operation. The combination as addressed above

additionally expressed that it was known to apply the tackifier in the perform in a discontinuous pattern, however there is no evidence that such discontinuous pattern would have been applied via spray coating. The admitted prior art, however, expressly suggested that spray coating a discontinuous pattern of adhesive upon a substrate was known per se wherein the pattern applied was a discontinuous pattern, see page 9, lines 12-26 of the specification. It certainly would have been within the purview of the ordinary artisan to utilize the conventional spraying techniques to apply a discontinuous pattern of adhesive upon the fiber plies using the known techniques admitted by applicant as known per se in the art wherein such a discontinuous pattern was suggested to have been useful in a perform and wherein it was known to apply the tackifier in liquid form from a spraying device.

7. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over the references as set forth above in paragraph 5 further taken with either one of Anderson or Chandler.

The references as set forth above in paragraph 5 suggested that one skilled in the art at the time the invention was made would have applied a pattern of adhesive which was discontinuous upon the reinforcement in the manufacture of the perform. The references, however, did not expressly state that the adhesive was applied in a herringbone pattern. However, application of adhesive in a herringbone pattern was known per se in the art of adhesive bonding as suggested by either one of Anderson or Chandler (the applicant is referred to column 4, lines 26-33 of Anderson and column 4, lines 3-8 of Chandler. The applicant is advised that the application of the open herringbone pattern wherein adequate bonding was achieved while not applying an excessive amount of adhesive would have been understood to meet the adhesion requirements of Lopez and additionally that the coating patterned rollers of

Vennike or Schommer would have been designed to provide such a pattern in the process in light of the evidence (the references to Anderson and Chandler). It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ a herringbone pattern of adhesive when bonding components with a discontinuous pattern as suggested was known by either one of Anderson or Chandler in the operation of providing a pattern of adhesive for bonding a perform with a tackifier as set forth above in paragraph 5. note that the reference to Anderson expressly suggested that the sue of a herringbone pattern would have provided an open pattern of adhesive which was clearly desirable in Lopez.

Response to Arguments

8. Applicant's arguments with respect to claims 1, 2, 4-9, 11-14, 18 and 19 have been considered but are moot in view of the new ground(s) of rejection.

The applicant is advised that one viewing Lopez would have appreciated that a patterned application of the aqueous tackifier would have been applied while the same was in liquid form as the application of the tackifier via flexographic printing or gravure printing was known per se to have been discontinuous pattern application.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff H. Aftergut whose telephone number is 703-308-2069. The examiner can normally be reached on Monday-Friday 6:30-3:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael W. Ball can be reached on 703-308-2058. The fax phone numbers for the

organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Jeff H. Aftergut
Primary Examiner
Art Unit 1733

JHA
February 6, 2003